

## NOMENCLATURAL AMENDMENTS TO THE CURRENT CATALOGUE OF AUSTRALIAN ODONATA

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### Abstract

Notes on the type depositories for seven species of libellulid dragonflies described by J.J. Kaup or F. Brauer from southeast Asia and recorded from Australia are provided, together with a note on the validity of the generic name *Tramea* Hagen.

### Introduction

Between 1857 and 1863, Hermann von Rosenberg, who was working in the then Netherlands East Indies [Indonesia], sent specimens of Odonata to his former teacher Johann Jacob Kaup, director of the Hessisches Landesmuseum Darmstadt [HLMD] in Germany. During that time, Kaup also received specimens from Renesent van Duivenbode, then resident in Sulawesi (Schneider 2004). Kaup assigned names to those species he believed were new to science and sent specimens to Friedrich Moritz Brauer, a distinguished odonatologist at the Natural History Museum, Vienna [NHMW] (Schneider 2004). Brauer generously retained Kaup's names unless they were previously occupied, hence the citation 'Kaup in Brauer.'

Because of Brauer's connection with NHMW, it had generally been assumed that the types from his papers (Brauer 1866, 1867a, b) would be stored there; however, they were not mentioned in that museum's type catalogue (St Quentin 1970). Of the 41 species described by Brauer, seven are known from Australia. Houston and Watson (1988), in their catalogue of Australian Odonata, noted that, for six of these seven species, the whereabouts of their holotypes or syntypes could not be traced.

While checking Kaup's insect collection in the holdings of HLMD, the current director, Wolfgang Schneider, found three drawers of Odonata. Based on the collection localities of Southeast Asia and label data which matched perfectly the information provided by Brauer (1866, 1867a, b), Schneider (2004) concluded that the drawers contained nearly all the type specimens mentioned in Brauer's papers. This discovery allows the type depository gaps in the Australian catalogue to be filled.

### Nomenclatural notes

*Gynacantha rosenbergi* Kaup in Brauer, 1867b

Houston and Watson (1988) noted that syntypes probably existed but their whereabouts were not traced. The original description was based on two males, now recognised as being one each in NHMW and HLMD (Schneider 2004). The NHMW specimen was designated lectotype and the HLMD specimen paralectotype by Schneider (2004).

*Brachydiplax denticauda* (Brauer, 1867b)

Houston and Watson (1988) noted that the whereabouts of the male holotype of *Diplax denticauda* had not been traced. Schneider (2004) confirmed that it was present in the HLMD collection. It has a handwritten label by Kaup, matches the type description, including the missing inferior appendage, and was not mentioned by St Quentin (1970).

*Brachydiplax duivenbodei* (Brauer, 1866)

Houston and Watson (1988) noted that syntypes of *Perithemis duivenbodei* had not been traced. St Quentin (1970), perhaps overlooked by Houston and Watson, designated a lectotype and paralectotype in the NHMW collection, selected by Lieftinck but not published by him. Two males from New Guinea [West Papua] and one from Celebes [Sulawesi], in HLMD, are part of the syntype series (five males) and are paralectotypes (Schneider 2004).

*Raphismia bispina* (Hagen, 1867)

Houston and Watson (1988) noted that syntypes of *Diplax thoracantha* Brauer had not been traced. Kaup's handwritten label 'Diplax thoracantha Br. Ceram' on a male specimen in HLMD is consistent with its status as the holotype.

*Neurothemis stigmatizans* (Fabricius, 1775)

The relocated Kaup/Brauer types belonging to subspecies of *N. stigmatizans* are referable to *N. s. manadensis* (Boisduval, 1835) and *N. s. bramina* (Guérin, 1832) (*c.f.* Ris 1911) and are therefore not relevant to the Australian fauna, which comprises typical *N. s. stigmatizans* (Fabricius).

*Tamea loewii* Kaup in Brauer, 1866

Houston and Watson (1988) listed a male from Ceram in NHMW as the holotype, based on Lieftinck (1942). At that time, Lieftinck believed that Australian specimens belonged to *T. loewii tillyardi* Lieftinck, 1942, the type of which, from Redlynch [near Cairns] in northern Queensland, was in the Rijksmuseum van Natuurlijke Historie, Leiden [RMNH]. With the benefit of further material, Lieftinck (1962) recognised that the two formerly accepted subspecies were not separable. While St Quentin (1970) listed a male holotype and a female allotype in NHMW under the same inventory number, Schneider (2004) recognised that both specimens were males. He also discovered two additional males in HLMD, one of which has a handwritten label 'Tamea Loewii Kaup, Ceram v.R.', leading him to conclude that the type series comprised four male syntypes, two in NHMW and two in HLMD (Schneider 2004). The NHMW male listed by St Quentin (1970) becomes the lectotype, 'by inference of holotype'; the others are paralectotypes.

Following Cowley (1935), Houston and Watson (1988) accepted the generic name *Trapezostigma* Hagen. However, Dijkstra *et al.* (2005) applied to the

International Commission on Zoological Nomenclature [ICZN] to conserve the generic name *Tramea* Hagen, 1861 by suppression of the senior objective synonym *Trapezostigma* Hagen, 1849. This submission was subsequently upheld (ICZN 2006), making *Tramea* the valid name.

*Macrodiplax cora* (Kaup in Brauer, 1867a)

Houston and Watson (1988) noted that there was a probable holotype but its whereabouts were not traced. The female holotype was found in the Kaup collection in HLMD (Schneider 2004).

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